Annex 1
Recommended template: "Course Description, Syllabus, Course Requirements"

COURSE SYLLABUS AND COURSE REQUIREMENTS
ACADEMIC YEAR2024/2025 1ST SEMESTER ...

Course title **STRUCTURAL DYNAMICS**

Course Code	*MSM412ANEP*
Hours/Week: le/pr/lab	2
Credits	3
Degree Programme	MSc
Study Mode (TVSZ-ben training schedule)	
Requirements	Examination
Teaching Period	every week
Prerequisites	Dynamics
Department(s)	Civil Engineering
Course Director	Dr .Orbán Ferenc
Teaching Staff	
Hours/Week: le/pr/lab	*2*

COURSE DESCRIPTION

A short description of the course (max. 10 sentences).
Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description

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Dynamic effort of impulse loads for single degree of freedom systems in elastic and plastic states. Calculations of natural frequencies and mode shapes for beams. Free vibration of beams. Excitation of beams by moving force. Exact dynamic stiffness matrices of beam systems. Dynamic stiffness matrices in case of application of finite element method. Calculation of vibration equations using modal analysis and numerical integrations. Calculation of machine foundations. Earthquake response analysis for SDOF. Dynamic effects of wind loads. Equations of motion for multi degree of freedom structures.

SYLLABUS

Neptun: Instruction/Subjects/Subject Details/Syllabus

1. GOALS AND OBJECTIVES

Goals, student learning outcome.
Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction (ez szerepel a neptunban)

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Lectures: will give an introduction to the basic knowledge of the structural dynamics.
Practical class: students will be able to practise the basic calculations and design through sample examples.
Exams: accumulated knowledge is tested in one midterm exam and a final exam

2. COURSE CONTENT

Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content

	TOPICS
LECTURE	1. *topic* 2. *topic* 3. *topic* 4. *etc.*
PRACTICE	1. *topic*

	2. *topic* 3. *topic* 4. *etc.*
LABORATORY PRACTICE	1. *topic* 2. *topic* 3. *topic* 4. *etc.*

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

week	**Topic**	**Compulsory reading; page number (from … to …)**	**Required tasks (assignments, tests, etc.)**	**Completion date, due date**
1.	Basic information. Short summary of dynamics.	…	…	…
2.	Symbols. SDOF system			
3.	Calculations of natural frequencies and mode shapes for beams. Cantilever beam.Simply supported beam. Example.			
4.	Dynamic effect of impulse loads for one degree of freedom systems in elastic and plastic states			
5.	Two degree of freedom systems			
6.	MDOF systems . Modal analysis			
7.	Midterm test			
8.	Lumped and consistent mass matrices.			
9.	Autumn break			
10.	Ground motion . Earthquake excitation			
11.	Earthquake Response Analysis for single degree of freedom structures.			
12.	Numerical examples for calculation. Earthquake effect.			
13.	Dynamic effects of wind loads			
14.	Machine foundation			
15.				

PRACTICE, LABORATORY PRACTICE

week	**Topic**	**Compulsory reading; page number (from … to …)**	**Required tasks (assignments, tests, etc.)**	**Completion date, due date**
1.	…			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				

15.				

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System) így szerepel a neptunban

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance *(e.g.: attendance sheet / online test/ register, etc.)*

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Attendance at all lectures is compulsory and will affect the grade (to 10 % at most). Absenteeism will impair the end-of-term grade. If the number of absenteeism exceeds 30 % of the total number of lectures, the performance of the semester will be denied. It is required to be in class at the starting time and stay until the ending time. A delay of more than 20 minutes will be regarded as absenteeism. In case of illness or family emergency, the student must provide a valid certificate, such as a sick note.

ASSESSMENT

Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.

Course resulting in mid-term grade *(PTE TVSz 40§(3))*

Mid-term assessments, performance evaluation and their ratio in the final grade *(The samples in the table to be deleted.)*

Type	Assessment	Ratio in the final grade
Test 1	*30 points*	*eg. 30 %*
Test 2 (Examination)	*60 points*	*eg. 60 %*
Attendance	*10 points*	*eg. 10 %*
…		

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

…

Grade calculation as a percentage

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % …
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

Course-unit with final examination

Mid-term assessments, performance evaluation and their weighting as a pre-requisite for taking the final exam

(The samples in the table to be deleted.)

Type	Assessment	*Weighting as a proportion of the*

		pre-requisite for taking the exam
Test 1	*eg. max 30 points*	*eg. 30 %*
Test 2	*eg. max 60 points*	*eg. 60 %*
Attendance	*eg. max 10 points*	*eg. 10 %*

Requirements for the end-of-semester signature

(Eg.: mid-term assessment of 40%)

…

Re-takes for the end-of-semester signature (PTE TVSz 50§(2))

The specific regulations for grade betterment and re-take must be read and applied according to the general Code of Studies and Examinations. E.g.: all the tests and the records to be submitted can be repeated/improved each at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

…

Type of examination *(written, oral):* ……*written*…….

The exam is successful if the result is minimum 40 %. *(The minimum cannot exceed 40%.)*

Calculation of the grade *(TVSz 47§ (3))*

The mid-term performance accounts for **…** %, the performance at the exam accounts for **…** % in the calculation of the final grade.

Calculation of the final grade based on aggregate performance in percentage.

Course grade	Performance in %
excellent (5)	85 % …
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)

COMPULSORY READING AND AVAILABILITY

[1.] Papers for all weeks

RECOMMENDED LITERATURE AND AVAILABILITY

[2.] Anil K. Chopra: Dynamics of Structures